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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Dale M. Pickelman, et al.

Serial No.: 10/624,070

Group Art Unit: 3681

Filed: July 21, 2003

Examiner: Bonck, Rodney H.

Title: HYDRAULIC CONTROLLED FAN CLUTCH WITH
INTEGRAL COOLING

Atty. Docket No.: DKT02152 (BWA 0245 PA)

I hereby certify that this correspondence is being transmitted via facsimile (571-273-8300) to
Examiner Rodney H. Bonck with the United States Patent and Trademark Office on:

July 17, 2006
Date of Deposit

Jo Anne Croskey

Jo Anne Croskey
Signature

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The Applicants, respectfully, requests a Pre-Appeal Brief Request for Review in view of improper rejections based upon error(s) in fact and based upon essential element(s) required to establish a *prima facie* rejection.

In the Advisory Action dated July 7, 2006, claims 1-10, 12-14, and 26-30 are pending. Claims 16 and 18 are allowed. Claims 12, 15, 17, 22, and 29-30 are allowable. Claims 1-10, 13-14, 19-21, 23-24, and 26-28 stand rejected. Of the rejected claims, claims 1, 24, 26, and 27 are independent claims. The Advisory Action states that the amendments provided in the Response of June 21, 2006 have been entered, but do not place the application in a condition for allowance.

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Rejection of claims 1-3, 5-10, 13-14, 19-21, 23-24, and 27-28
under 35 U.S.C. 103(a)

The Final Office Action of April 21, 2006 states that claims 1-3, 5-11, 13-14, 19-21, 23-24, and 27-28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens et al. (U.S. Pat. No. 2,960,202) in view of Spokas (U.S. Pat. No. 4,094,393), which the Advisory Action maintains.

As previously submitted, claim 1 recites the limitations of an engaging circuit that is coupled to a housing assembly. The engaging circuit includes a first pitot tube that is coupled within the housing assembly and receives hydraulic fluid. A hydraulic fluid flow controller is coupled to the first pitot tube. The engaging circuit engages the housing assembly to a fan shaft in response to the supply of the hydraulic fluid from the first pitot tube. The engaging circuit also variably controls the fluid pressure to the pitot tube via the hydraulic fluid flow controller.

The Office Actions state that Stevens discloses a valve arrangement 152 that teaches the claimed fluid flow controller. Applicants have argued and the Examiner has agreed that the valve 152 of Stevens is either in an open or a closed stated. The open and closed states are, respectively, associated with engagement or disengagement of the helicopter blades. This allows the pilot of the helicopter to manually engage or disengage the helicopter blades. The Applicants have also argued, which the Examiner has disagreed, that the valve 152 does not provide variable adjustment or associated variable engagement, as claimed.

The plain and ordinary meaning of the term "variable" means something that is likely to vary, something that is subject to changes, something that takes on or assumes different values, or a quantity that can assume any of a set of values. See *Merriam-Webster's Third New International Dictionary* and elsewhere. Applicants also submit that if extrinsic reference sources evidence more than one definition for a term, the intrinsic record must be consulted to identify which of the different possible definitions is most consistent with applicant's use of the terms. See *Brookhill-Wilk I*, 334

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F.3d at 1300, 67 USPQ2d at 1137 (Fed. Cir. 2003). Applicants submit that no reference source has been put forth to define the term variable to mean ON or OFF. Applicants also are unaware of any reference source provide a meaning as the Examiner suggests. Nevertheless, should such a reference source exist, the intrinsic record must be consulted for consistency.

The intrinsic evidence includes the claims, the specification, and the prosecution history. Extrinsic evidence includes expert testimony, inventor testimony, dictionaries, treatises, and prior art not cited in the prosecution history. Extrinsic evidence is turned to only when the intrinsic evidence is insufficient to establish the clear meaning of the asserted claim. *Zodiac Pool Care Inc. v. Hoffinger Indus. Inc.*, 206 F. 3d 1408, 1414, 54 USPQ2d 1141, 1145 (Fed. Cir. 2000) and *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582-84, 39 USPQ2d 1573, 1576-78 (Fed. Cir. 1996). Thus, the intrinsic record includes, not just the application, but also the intended interpretations and other related descriptions provided by the Applicants in the prosecution history.

Applicants submit that the Panel should consider the application, as well as the prosecution history in determining the meaning and scope of the claim terms. The history contains the complete record of all of the proceedings before the Patent and Trademark Office, including any express representations made by the Applicants regarding the scope of the claims. As such, the record before the Patent and Trademark Office is often of critical significance in determining the clearest meaning of the claims. See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980, 34 USPQ2d 1321, 1330 (Fed. Cir. 1995).

Applicants submit that in interpreting the term "variable", the Applicants clearly did not intend such term to refer to the simple ON/OFF or Engaged/Disengaged states of Stevens. One primary advantage of the present invention is that it provides variable engagement via internal hydraulic pressure control. This variable engagement provides an infinite range of engagement. The present application states that the fan drive system

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described has varying degrees of engagement and distinguishes this from fully engaged and fully disengaged states. An associated advantage of the variable engagement is that multiple selected or predetermined engaged speeds can be selected, as opposed to a fully engaged or a fully disengaged speed. See paragraphs [0006], [0008], [0038], [0041]-[0042], and [0058]-[0059] of the present application. Thus, there is a clear and distinct difference between ON/OFF engagement and variable engagement, which is stated throughout the present application. To interpret the term "variable" as suggested by the Examiner is simply unreasonable, improper, and inconsistent with the present application.

In addition, claims terms ought to be construed in view of the intrinsic evidence, which is the primary source of claim interpretation. See *Phillips v. AWH Corp.* No. 03-1269, 75 USPQ2d 1321 (Fed. Cir. 2005). The intrinsic record clearly provides for the intended meaning of the claim terms. Therefore, one cannot deem the definitions of the term "variable" other than as Applicants have unequivocally pronounced.

The valve 152 of Stevens merely allows fluid to flow or prevents fluid from flowing to the piston chamber 94. The valve 152 is not adjustable to allow the pilot to select a desired pressure of oil passing through the scoop tube 104. As such the valve 152 of Stevens does not provide the variable engagement claimed.

Amended claim 24 similarly recites the limitations of variably engaging a housing assembly to a fan shaft of an engine cooling fan in response to the supply of hydraulic fluid from a pitot tube and via a valve. The valve is in fluid communication with and is configured to adjust fluid pressure in the pitot tube. As similarly stated above, the valve 152 of Stevens is not adjustable and is not configured to adjust fluid pressure in the scoop tube 104. The present application, as stated above, describes, defines, and distinguishes the adjustment claimed over that provided in Stevens.

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Also, Applicants again maintain their previous submissions that it would not have been obvious to modify and utilize the helicopter clutch mechanism of Stevens to control the engagement of a cooling fan of an engine. Stevens discloses an engine cooling fan 44, which is not engaged through the use of the clutch mechanism of Stevens. None of the references utilize a pitot tube as claimed for the engagement of a cooling fan. Applicants believe that to suggest that the recited pitot tube engagement limitations are obvious is to clearly use improper hindsight reasoning. See also arguments submitted in the Response of March 9, 2006. Nevertheless, claims 1 and 24 include the novel variability and pressure adjustment control.

The Office Action state that it is known to drive an engine cooling fan using a hydraulically controlled multi-plate clutch, as shown in Spokas, and as such it would have been obvious to drive a cooling fan via the clutch of Stevens. Applicants submit that knowledge of driving an engine cooling fan using a hydraulically controlled multi-plate clutch is irrelevant. Independent claims 1 and 24 do not recite a multi-plate clutch, but rather recite the use of an engaging circuit having a pitot tube for fan shaft engagement. Such use is not shown in any of the references.

The Office Action further states that the motivation to modify Stevens stems from a desire to provide a selective coupling of a fan to a housing. Neither Stevens nor Spokas disclose selective coupling of a fan to a housing. Stevens only discloses the manual engagement of helicopter blades. The selective coupling in Stevens is directed to the allowing or disallowing of helicopter blade engagement, as opposed to the variable adjustment of cooling fan engagement. Spokas does not disclose selective coupling.

Thus, it would not have been obvious to modify the clutch of Stevens to drive an engine cooling fan. Therefore, since each and every limitation of claims 1 and 24 are not taught or suggested by Stevens and Spokas alone or in combination, that claims 1 and 24 are novel, nonobvious, and are in a condition for allowance. Since claims 2-10, 12-15, 17, 19-23, and 28-29 depend

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from claim 1, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

With respect to claim 17, Applicants have agreed that Stevens fails to disclose a controller that provides a cooling signal. The Office Actions state that Spokas discloses a device 126 for controlling fluid flow. Applicants submit that the device 126 of Spokas is a temperature sensitive element, which simply opens with an increase in temperature. The device 126 is not a controller that generates a cooling signal nor is it a controller that receives a cooling signal. Furthermore, the device 126 is used to engage or disengage (ON or OFF) a drive mechanism in response to temperature. The claimed hydraulic fluid flow controller adjusts fluid flow pressure to an engaging circuit in response to a cooling signal. Both Stevens and Spokas fail to disclose the signal generation claimed, the use of controllers as claimed, and the adjusting of fluid flow pressure as claimed. Thus, claim 17 is further novel and nonobvious for the above-stated reasons. Note that the Examiner has not responded to these arguments.

With respect to claim 23, the Office Actions state that Spokas teaches providing a pressure relief valve at 100. Applicants submit that although the valve 100 of Spokas is a pressure relief valve, it does not relieve pressure within a pitot tube. Of course, pressure relief valves exist, but such existence does not anticipate all uses thereof. The valve 100 is used to allow lubricant to flow to a clutch. The opening of the valve 100 does not affect the pressure in the pitot tubes 60, which are simply used as lubricant return lines. Thus, the valve 100 is not the same as and is not used for the same purpose as the valve claimed. Therefore, claim 23 is further novel and nonobvious for the stated reasons. Note that the Examiner has not responded to these arguments.

Claim 27 recites the limitation of a pitot tube that is coupled within a housing and has multiple branches. This limitation is not taught or suggested by either Stevens or Spokas. The Examiner has also not responded to this argument. The term "branch" refers to the coming out or stemming out from a main stem, something that extends from or enters into a main body or

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source, a division of a stem, or secondary stem arising from a main stem. See also *Merriam-Webster's Third New International Dictionary* and elsewhere. A definition often used to define and illustrate the term "branch" is, "to divide into two or more branches so as to form a fork". In other words a fork has two or more branches or prongs. Thus, each prong in the fork is a branch. Similarly, in review of Figure 2A of the present application, one can see that the pitot tube 152 has a main channel 110, a piston branch 112, and a controller branch 114, which provide the associated features described in the present application and in the prosecution history.

Applicants have stated that although the clutch mechanism of Stevens has a scoop tube 104, the scoop tube 104 does not have multiple branches. The scoop tube 104 is a single tube with a single passage therein that extends from a reservoir in the housing 32, 34, and 36 to the hole 146. The branches of the pitot tube claimed allow for the redirection of hydraulic fluid away from a clutch plate piston, which allows for variable fluid pressure adjustment in the pitot tube and variably controlled engagement of a fan. The pitot tubes of Spokas are also single passages and are used for a different application and purpose as that of the present invention, as stated above.

Thus, Stevens and Spokas also fail to teach or suggest each and every element of claim 27. Therefore, claim 27 is also novel, nonobvious, and is in a condition for allowance. Since claim 30 depends from claim 27, it too is novel, nonobvious, and is in a condition for allowance for at least the same reasons.

Rejection of Claims 4 and 26 under 35 U.S.C. 103(a)

Claims 4 and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens in view of Spokas and further in view of Matson (U.S. Pat. No. 4,633,986).

Applicants submit that since claim 4 depends from claim 1, that it is also novel, nonobvious, and is in a condition for allowance for at least the same reasons.

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With respect to claim 26, the Office Actions state that Matson is analogous art and that it shows cooling fins on the outside of a clutch housing. Applicants submit that regardless of whether this is true, Stevens, Spokas, and Matson clearly fail to teach or suggest the limitation of channeling hydraulic fluid through a piston housing, which is received from a pitot tube, into a fan shaft chamber and directing said hydraulic fluid through said fan shaft chamber into and through a clutch pack. Stevens fails to disclose a fan shaft. Also, in Stevens oil is circulated between the housing 32, 34, and 36 and a groove 110 in the drive member 10, which is coupled to the engine shaft 14. The oil is not directed into the blade shaft 12. In Spokas the pitot tubes 60 are used as oil return devices to return the oil to the fluid sump and are not used to direct the oil to the clutch 30. Also, although Matson discloses a pitot tube 42 for directing oil to clutch plates, Matson fails to teach or suggest the stated limitations. The oil in Matson is not directed through a piston housing or into or through a fan shaft chamber. The oil in Matson is directed around the clutch engagement face 70 and the brake engaging face 87. Nowhere in the Matson reference is a fan shaft chamber disclosed or suggested. Thus, claim 26 is novel, nonobvious, and is in a condition for allowance for the above-stated reasons.

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Therefore, Applicants respectfully request the panel to reverse the Examiner's position with respect to each and every one of the pending claims based upon the errors in fact and the essential elements missing to establish a prima facie case of obviousness described above. The application is in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Panel Examiners have any questions or comments, they are respectfully requested to contact the undersigned attorney.

The Commissioner is hereby authorized to charge any additional fees, which may be required, or credit any overpayment to Deposit Account No. 50-0476.

Respectfully submitted,

ARTZ & ARTZ, P.C.



Jeffrey J. Chapp, Reg. No. 50,579
28333 Telegraph Road, Suite 250
Southfield, MI 48034
(248) 223-9500

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